UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/085,303	02/28/2002	William L. Bowden	08935-257001	7607

26161 7590 10/19/2005

FISH & RICHARDSON PC
P.O. BOX 1022
MINNEAPOLIS, MN 55440-1022

EXAMINER	
ALEJANDRO, RAYMOND	

ART UNIT	PAPER NUMBER
1745	

DATE MAILED: 10/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Advisory Action Before the Filing of an Appeal Brief	Application No. 10/085,303	Applicant(s) BOWDEN ET AL.	
	Examiner Raymond Alejandro	Art Unit 1745	

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 11 October 2005 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

1. ☒ The reply was filed after a final rejection, but prior to or on the same day as filing a Notice of Appeal. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114. The reply must be filed within one of the following time periods:
   a) ☒ The period for reply expires 3 months from the mailing date of the final rejection.
   b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.

   Examiner Note: If box 1 is checked, check either box (a) or (b). ONLY CHECK BOX (b) WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

NOTICE OF APPEAL

2. ☐ The Notice of Appeal was filed on _____. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

AMENDMENTS

3. ☐ The proposed amendment(s) filed after a final rejection, but prior to the date of filing a brief, will not be entered because
   (a) ☐ They raise new issues that would require further consideration and/or search (see NOTE below);
   (b) ☐ They raise the issue of new matter (see NOTE below);
   (c) ☐ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
   (d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.

   NOTE: _____. (See 37 CFR 1.116 and 41.33(a)).
4. ☐ The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).
5. ☐ Applicant's reply has overcome the following rejection(s): _____.
6. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
7. ☒ For purposes of appeal, the proposed amendment(s): a) ☐ will not be entered, or b) ☒ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.

   The status of the claim(s) is (or will be) as follows:
   Claim(s) allowed: _____.
   Claim(s) objected to: _____.
   Claim(s) rejected: 1-7.
   Claim(s) withdrawn from consideration: 8-17.

AFFIDAVIT OR OTHER EVIDENCE

8. ☐ The affidavit or other evidence filed after a final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).
9. ☐ The affidavit or other evidence filed after the date of filing a Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing a good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).
10. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

REQUEST FOR RECONSIDERATION/OTHER

11. ☒ The request for reconsideration has been considered but does NOT place the application in condition for allowance because: see next page.
12. ☐ Note the attached Information Disclosure Statement(s). (PTO/SB/08 or PTO-1449) Paper No(s). _____
13. ☐ Other: _____.

RAYMOND ALEJANDRO
PRIMARY EXAMINER

Raymond Alejandro
Primary Examiner
Art Unit: 1745

Response to Arguments

1. Applicant's arguments filed 10/11/05 have been fully considered but they are not persuasive. Applicant's contention in now grounded on the assertion that the examiner has mischaracterized the disclosures of Harrison and Boryta, the two secondary references relied upon by the examiner, firstly, to provide the teachings of the specific Na contents, and, secondly, to provide a reasonable basis as to why those of ordinary skill in the would prefer to minimize the content of Na in certain lithium-based environment or systems. That being said, applicant is reminded that the test for **obviousness** is not whether the features of a secondary reference may be (bodily) incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). In addition to that, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). Currently, the examiner reiterates and re-affirms herein his position that it is well known in the art to minimize the content of Na in Li-based systems. In being reminiscent, it is pointed out that applicant's invention is a lithium device (i.e. an electrochemical cell), and thus, the teachings used in the prior art to avoid damages, or dangerous or deleterious conditions in lithium-based systems are found to be absolutely relevant and equally applicable to the claimed lithium

electrochemical cell. The examiner recognizes that applicant is entitled to explain his/their own interpretation or characterization of the teachings of the prior art; however, at the same time, applicant is strenuously reminded that the examiner is also entitled to a broad but fair interpretation/characterization of both the claimed invention and the prior art. To that effect, the 35 USC 103 rejections are and will be maintained for the reasons of record. Since applicant disagrees with the examiner's characterization of the prior art's teachings and the examiner also disagrees with applicant's characterization of the prior art disclosure, applicant now has the option of becoming the appellant.

2. With respect to "Applicant's Note 1" on page 6 (bottom section), the examiner's disagrees with applicant's interpretation of paragraph 0030. In that, it has been argued that "*Applicants believe that this a typographical error, and that the 190 ppm is meant to refer to calcium*". In this regard, it is respectfully contended that the two main arguments presented by the applicants ("*mischaracterization*" above as well as "*typographical error*") are solely based upon subjective evidence, and none of the two arguments appear to have an objective line of reasoning to further convince the examiner of their validity, correctness or accuracy. Thus, absent further **objective evidence** regarding why the teachings of the secondary reference cannot be combined with the lithium systems, in general, of the primary references; and why it was really meant to refer to calcium rather than sodium, applicant's arguments are unpersuasive.

The following response to applicant's arguments was put forth in the final office action of 08/04/05 and is repeated here to address additional applicant's argument concerning the applied art:

3. The main contention of applicants' arguments is premised on the assertions that the prior art of record, as a whole, "*does not disclose or suggest any reason to limit the amount of sodium present in an electrochemical cell*", "*Nothing is suggested as to the sodium level of the entire electrochemical cell, as claimed*", "*Harrison discloses or suggest nothing about the sodium content of the remainder of the components of an electrochemical cell*", "*Similarly, Boryta et al identify only the need for low sodium lithium metals for battery applications, without referencing any requirement that the remainder of the electrochemical cell be low in sodium*". However, this assertion is respectfully disagreed with. In this respect, the examiner likes to point out that both secondary references provide, disclose, teach, reveal, divulge or makes known reasons about why the Na (sodium) content should be reduced or minimized in certain chemical systems or processes. In particular:

i) Harrison et al'871 discloses: *a) "high purity lithium carbonate is also required in the emerging technologies of lithium batteries" (See paragraph 0004); and b) "The key to obtaining lithium of the grade required for lithium batteries is to use purified lithium materials to minimize lithium's rapid reactions with substances" (See paragraph 0005).*

ii) Boryta et al'267 teach that: "*it is desirable, from a commercial standpoint, to provide a source of lithium low in sodium content <u>because sodium becomes reactive and potentially explosive</u> in certain chemical processes, particularly those using lithium metals" (See paragraph 0004); and Boryta et al further discuss about "the importance of minimizing the sodium content in the metals, in particular, to manufacture low sodium lithium metal suitable for <u>battery applications"</u> (See paragraph 0020).*

Hence, as seen above, both secondary references clearly disclose that reduction, removal and/or elimination (high purity) of Na is necessary to minimize lithium's rapid reaction with such substance or simply because Na is highly reactive and potentially explosive. Thus, both secondary references offer the skilled artisan enough motivation to remove from or minimize sodium content in lithium-based systems; and since the present claims are directed to a lithium electrochemical cell per se (***←emphasis added***), the examiner strenuously contends that both secondary references (*i.e. Harrison et al'871 and Boryta et al'267*) are analogous art and thus, pertinent to the primary references and the field of applicant's endeavor, in general. In other words, the secondary references are clearly disclosing that it is highly recommended to reduce the concentration of sodium in lithium-based systems due to its reactivity. If applicants do not believe, from a chemical standpoint, that minimizing lithium's rapid reactions and/or avoiding potential explosions in lithium systems by lowering sodium content is a reasonable motivation to minimize or reduce sodium concentration or contents, thus, the examiner respectfully submit that applicants do not understand and completely overlook safety requirements and the desirability of providing a safe and chemically stable lithium-based system which minimizes any potential risk or harm to customers using it. For this reason, the examiner maintains herein his position that the secondary references provide a reasonable motivation to modify the primary references to reduce or lower the sodium content in the lithium environment of the disclosed electrochemical cells.

All in all, the examiner strongly disagrees with the position taken by the applicant that the secondary references do not expressly disclose reducing sodium content in electrochemical cells per se, as their teachings are somehow only applicable "*in the context of the preparation of specific components (e.g. cathode or lithium metals)*" but not in the context of preparing the

electrochemical cell as a whole. Don't you think that those of ordinary skill in the art attempting to provide a fully functional ***lithium*** electrochemical cell would carefully look at the teachings of both Harrison et al'871 and Boryta et al'267 and would definitely consider their teachings about lithium reactivity and sodium content in an attempt to prevent unnecessary reactivity and/or dangerous explosion? Thus, the examiner reiterates his position that the teachings of Harrison et al'871 and Boryta et al'267 cannot be only segregated to specific components or elements, in fact, such teachings are totally extendable to any lithium-based system or any system/product using lithium as a primarily essential feature as instantly claimed (i.e. the lithium electrochemical cell).

4. Additionally, in response to applicant's argument that "*none of the references disclose or suggest any reason to limit the amount of sodium present in an electrochemical cell*", the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art (***←emphasis added***). See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

5. In further response to applicant's argument that "*none of the cited primary references recognize that the sodium content of a cell is either important or affects the performance of the cell*", the fact that applicant has recognized another advantage/disadvantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985). However, this applicants' argument contradicts applicant intended

invention of reducing the amount of sodium in an electrochemical cell. That is, this argument is irrelevant to the claimed subject matter because, as applicant is aware of, his ultimate intended invention is to ***reduce*** the sodium content in the electrochemical cell; in no way, applicant's invention is intended to ***add, aggregate or incorporate*** sodium in the electrochemical cell. Thus, applicant's arguments that the prior art of record must thus recognize the importance of using sodium is completely inapposite and out of place.

6. Applicant has argued that "*there is no indication in the primary references that the cell should be manufactured and/or handled in a certain way to provide the claimed sodium content*". Nevertheless, applicant is respectfully reminded that his ultimate intended invention is a lithium electrochemical cell per se, and not its method of manufacture or production. Thus, applicant's arguments concerning the lack of specific production/manufacturing steps add nothing to the patentability of the claimed product (i.e. the electrochemical cell) because what is given patentably consideration is the product itself and not the manner in which the product was made.

7. Regarding applicant's argument that "*there is also no indication in any of the primary references of where the cell components were purchased or whether they were provided to have a low sodium content*", since PTO does not have proper equipment to carry out such analytical tests and/or does not require applicants to provide such information about raw material sources or suppliers, the burden is shifted to the applicants to provide sound or objective evidence demonstrating that the primary references were/are originally intended to employ cell components having a higher lithium content.

RAYMOND ALEJANDRO
PRIMARY EXAMINER